

Fluorescent materials

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Fluorescent materials (I) have a matrix based on silicic acid (hetero)polycondensate (II) contg. Er³⁺ ions and opt. other additives: in which (a) (II) is a hydrolytic (pre)condensate of cpd(s). of Si and opt. B, Al, Ge, P, As, Sb, Sn, Pb, transition metal(s), lanthanide(s) and/or actinide(s) undergoing hydrolytic condensn. and/or precondensates obtd. from these cpds. by the action of water or humidity, opt. in the presence of a catalyst and/or solvent; (b) 5-100 mole % (pre)condensed cpds. are based on monomers derived from silanes of formula SiR_aX_b (III); (c) the Er³⁺ ions are fixed to nanoparticles and/or complexed with organic cpd(s). having at least one available electron pair donor gp.; (d) the nanoparticles have dia. NOTGREATER 20 nm.; (e) (I) contains 10-40 vol.% nanoparticles; and (f) (I) contains 1-50 wt.% Er³⁺ ions, R = an alk(en)yl, (alkyl)aryl or arylalkyl gp., which may have -O-, -S- or -NH- in the chain and/or contain spiro, oxiran, cyclic anhydride or NCO gps., X = H, halogen, OH, alkoxy, acyloxy, alkylcarbonyl, alkoxycarbonyl or NR'₂, R' = H, alkyl or aryl, a, b = 1, 2 or 3 with (a+b) = 4. Also claimed is a method of producing the material.

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